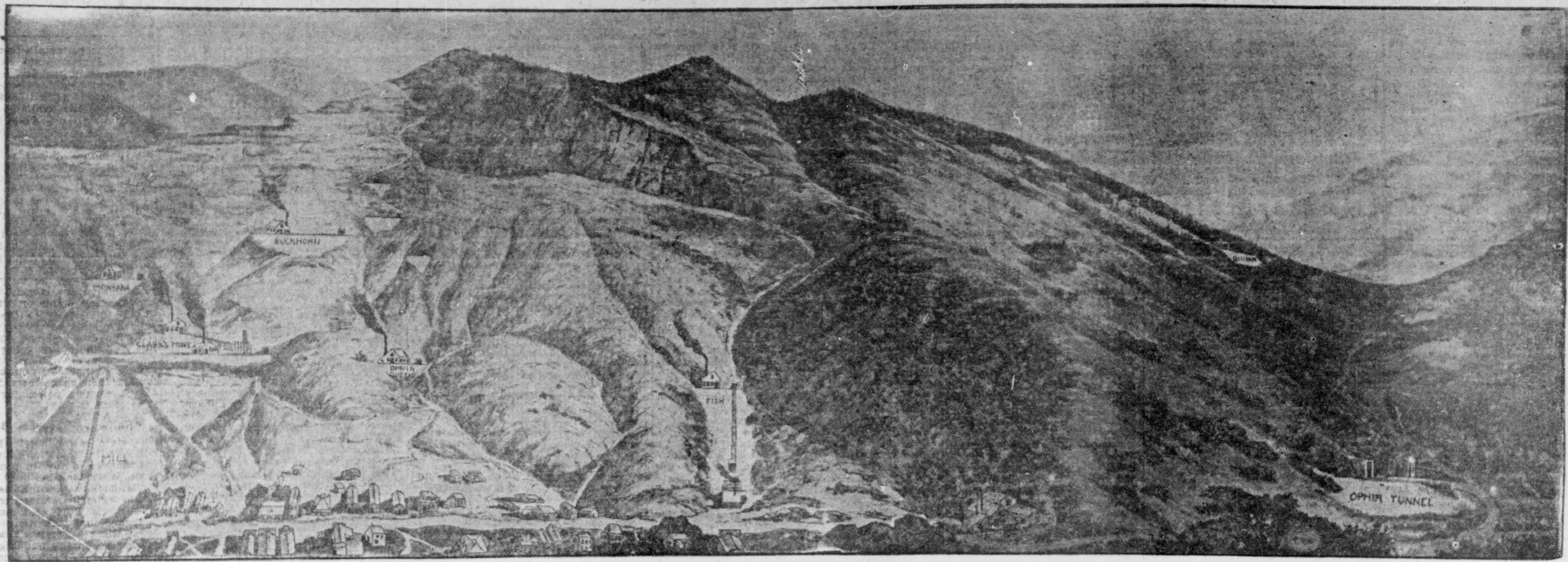


Immense Treasures of Buckhorn Ore Company's Ground to Be Extracted



View of Ophir Camp, Showing Buckhorn and Ophir Tunnel Properties, Belonging to Buckhorn Ore Company and Others. Also Clark Mine and Mill.

One of the gigantic mining enterprises in Utah is embodied in the plans laid out and being executed by the Buckhorn Ore company, a Minnesota corporation, projected by Duluth and Milwaukee capitalists.

The scene of its operations is at Ophir, Tooele county, Utah, a camp not in history, prominent at present as a producer and promising almost beyond computation in future performance. This undertaking consists of the grouping together and operation of a large area of proven mining ground and is in keeping with the line followed by the builders of modern bonanzas throughout the west.

Large Areas Are Best.

Large areas are admitted to be the only safe foundations for great mines. The advantages are opportunities for drainage, avoidance of litigation and absolute and undisputed right to reap the profits from all ore finds against the aggressions of neighboring owners. In short, it gives the investor a chance to obtain the rewards for which he has risked and won.

This consolidation of interests includes the holdings of the Buckhorn Mining company and the Ophir Tunnel company, with a combined area of over 1,200 acres.

These properties overlap the summit of a ridge of the Ophir mountain and reach downward to the tunnel side to a point some 3,000 feet below the highest point of the tract.

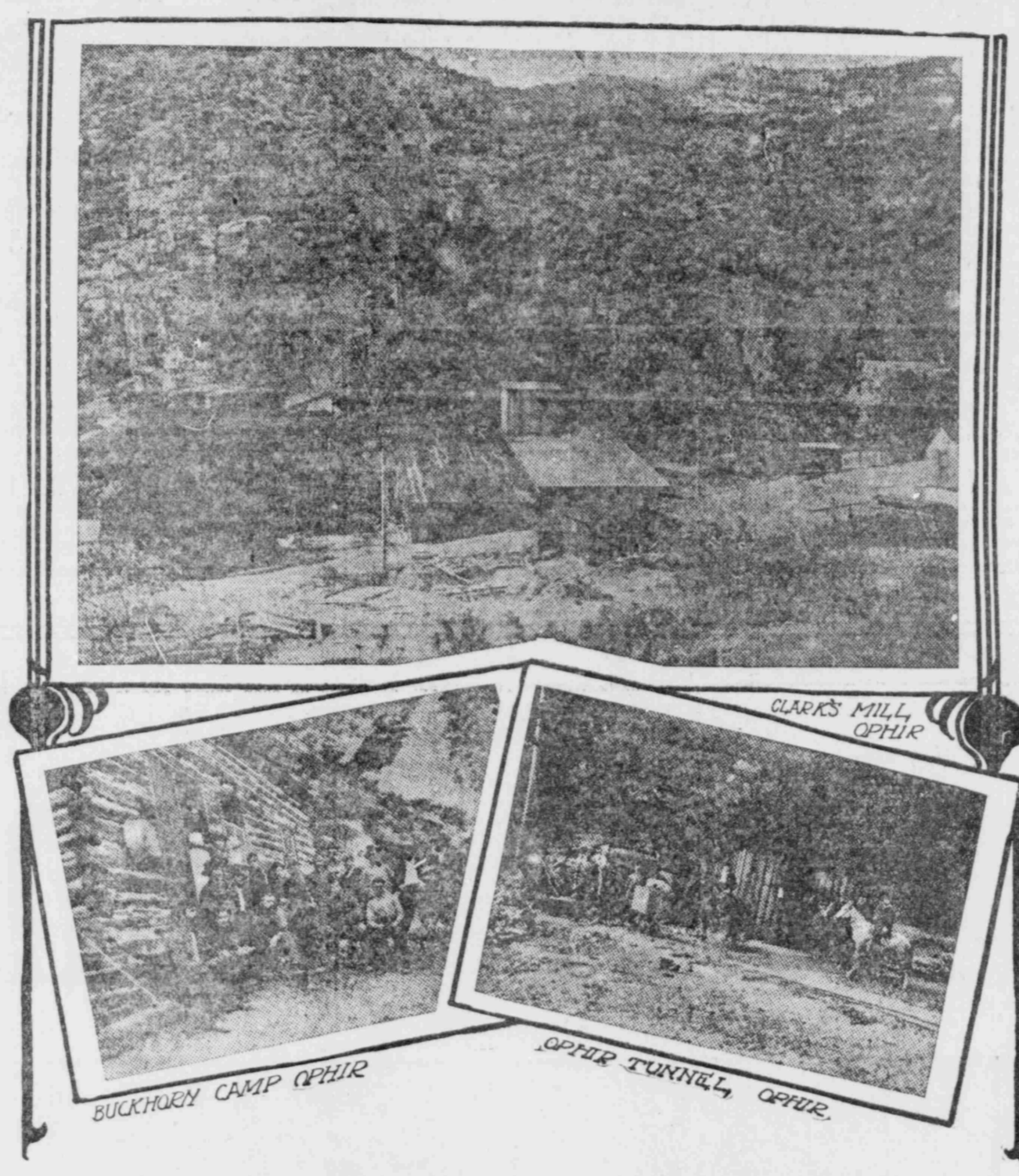
This mine lies between the famous Ophir Hill mine, owned by Senator W. A. Clark of Montana, and which joins it on the east, and the almost equally

famous old Mono mine and the Hidden Treasure mine, which lie together and join the Buckhorn Ore company's mine on the west. The Clark mine is one of the most successful properties in the state. It is equipped with a concentrator plant, from which between 125 and 150 tons of concentrates are shipped every day. This locality is nine miles distant from St. John, a station on the main line of the San Pedro, Los Angeles & Salt Lake railroad, also controlled by Senator Clark, and from which a spur road is soon to be run to his mine.

Record of the Buckhorn.

The Buckhorn property has a record of having produced over a quarter million dollars from its upper workings. These values were taken from a hidden vein, similar to the ore bodies of Bingham, and is a replacement of lime by metallic contents.

The more recent work on the Buckhorn has been done by the joint efforts of the Niedringhaus of St. Louis, former owners of the mine, and the Western Exploration company, headed by W. F. Snyder and the late P. L. Kimberly. This work consists of three tunnels 200 feet vertically apart on the same fissure and crosscuts and drifts into two other fissures to the extent of upwards of 5,000 feet, or one mile. This work, in addition to developing the fissures in part, is serving a double purpose, as it is headed mainly towards the bedded deposit, which will be cut several hundred feet below the lowest point in the old workings and nearly 2,000 feet below the highest point on the ground. The bedded vein as far as penetrated from the surface shows a thickness of from five to twenty feet, and will doubtless, like similar deposits



Silver Shield and Carisa

The Silver Shield, at Bingham, and the Carisa, at Eureka, are both operated under the direction of Harry S. Joseph, the well-known mine operator and broker of Salt Lake.

Both of these properties were several years ago in the dividend-paying list, but both of them, either from mismanagement or a misconception of the existing underground conditions, retrograded before falling into the hands of the present management and into the assessment list.

After nearly two years of intelligent direction and the expenditure of considerable money, both properties are responding well to the efforts for their restoration, and the indications are that they will soon again become bona fide mines on a more substantial and permanent basis than ever before.

The Silver Shield is in the immediate vicinity of the giant properties of the United States company's holdings, and, like all of the properties, the work is performed through a tunnel.

The driving of the tunnel has been accompanied with considerable difficulty from an overabundance of water, but this difficulty has been overcome and recently the bedded vein toward which the work was directed was reached and a fine body of ore characteristic of the camp in value and magnitude was encountered.

be utilized for the equipment that completes the work.

An interesting feature of this as well as of other similar plants is the laboratory, where all the rock is analyzed and all finished products are tested. The analysis determines the proportions of the different rocks to be used in the mixture, and the tests are a check on this having been accomplished and the accuracy of the burning.

This is an important feature of the enterprise, for a slight variation from the proper formula or a slight defect in the process is fatal to results. This company is owned chiefly by English capitalists, and Ledyard M. Bailey of Salt Lake is its manager.

The Silver Shield possesses a liberal acreage and has a sufficient area of contiguous ground under bond to place it, when development has been completed, in that class of Bingham properties which is sufficient to satisfy the ambition of most mine operators. Recently tests were made of the Silver Shield ore at a neighboring concentrator and the experiments showed that the ore can be concentrated to good advantage, and steps have been taken that will result in the erection within the coming year of a seventy-five-ton mill for reducing these ores. A millsite favorable for economic operation has been obtained a short distance down the gulch from the Boston Consolidated company. Water rights have been secured and details all perfected so that speed can be made when the undertaking is once begun. This property is splendidly equipped with electric motor cars and electric lights. Recent shipments from this property revealed values measured by 25 per cent lead, fifteen ounces of silver, 2.5 per cent copper and \$5 gold to the ton. The concentrates obtained from a test run yielded 13.5 per cent lead, 5.08 ounces silver, 80 cents gold and 21 per cent iron.

Year's Work at the Carisa.

The year's development in the Carisa have been equally encouraging. Shipments have brought good returns, and the assuring condition of the mine is generally known. Within the past year the output of the mine aggregated 5,359 tons of ore, which yielded 448.6 ounces of gold, 33,341 ounces of silver and 361,107 pounds of copper. One-half of this tonnage has been produced within the last four months. In the Spy property, the latest acquisition of the Carisa, results have been particularly gratifying, as an ore body has been found at greater depth which had been lost or supposed to have pinched out at a higher level. It has now been followed to a depth of 700 feet and work is being pushed to reach it 100 feet deeper.

Other work above has opened a twenty-foot-wide body on the 600-foot level, which shows 6 per cent copper.

Its in that region, increase both in size and value as depth is attained. In the development of the fissure ground amazing results have been obtained to the extent that no less than twelve ore chimneys have been encountered with an average depth of fully 500 feet vertically for stopping. A shipment of one car from one of these bodies recently netted the company \$801, the contents being silver, lead and small gold values. With further depth copper values will in all probability appear.

Great Bodies of Ore.

The immensity of these twelve ore bodies, which have as yet been called upon for only the ore extracted in their development, can best be understood when it is stated that they vary in thickness from two to thirty feet and in length along the fissure some of them measure 100 feet or more, with a combined length of some 600 feet, and extend nearly that distance vertically.

The ore from these places carries about one ounce of silver to each per cent of lead, and the lead varies from 20 to 65 per cent, averaging toward the latter amount. A test run of 500 tons of the lowest grade of this material has been arranged for at the Clark mill, three-quarters of a mile away, but from the uniform richness of the deposits it is probable that concentration will be needed for but a small portion of this ore, if, indeed, any of it. The Buckhorn property, with over 600 acres, slopes toward Dry canyon on the west, and the Ophir Tunnel property, with 520 acres, slopes from the border line near the summit to Ophir canyon on the east, and the Ophir tunnel extends into the Buckhorn ground will cut it nearly 1,000 feet below its lowest present workings

and nearly 3,000 feet below the highest known mineralized ground on the tract.

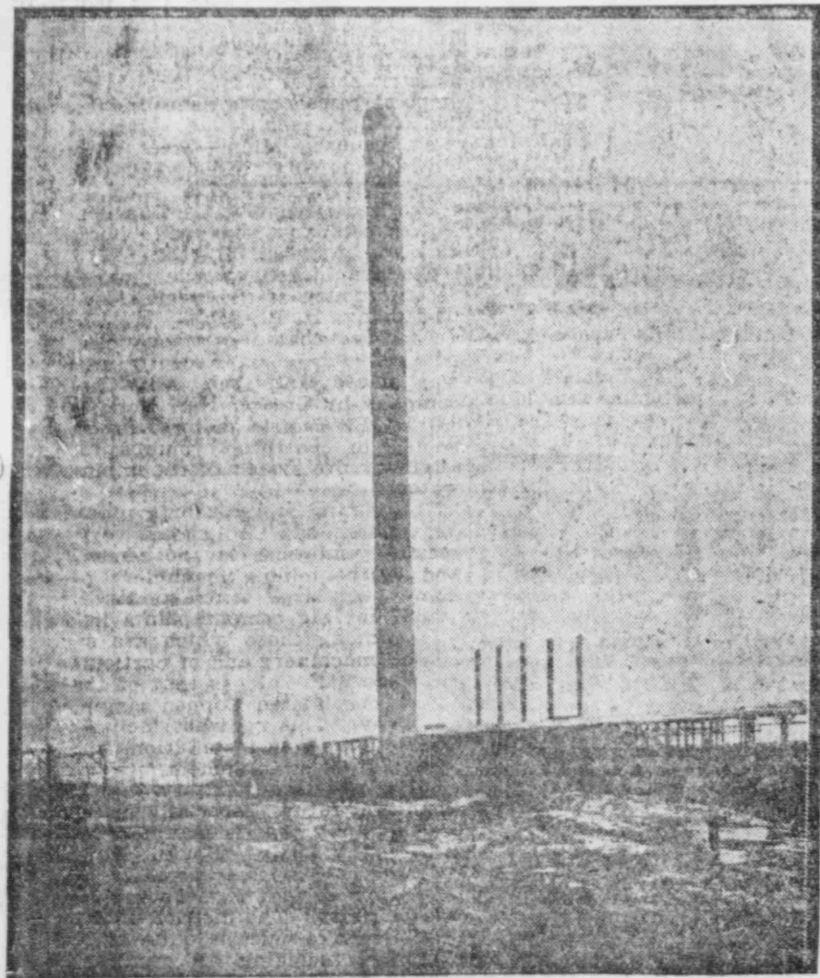
Ophir Tunnel Property.

The Ophir Tunnel property, according to reports by competent authorities, covers to all appearances the center of the heart of this ore belt, a distance of 7,000 feet long by from 3,000 to 4,000 feet wide. The tunnel, which is now in 1,000 feet, will cut in the original Ophir Tunnel ground five fissures of great size exposed at the surface, where every indication points to the existence of large ore bodies, and will then cut the extension of the old Buckhorn ore bodies nearly 1,000 feet below its lowest workings, where the rich bodies in fissures have already been found.

This great tunnel will, in addition to exploring this vast tract, drain the property and afford an economic outlet for the ores and deliver them to a convenient place for transportation to the smelter, or in close proximity to the millsite, as the case may be. It should be observed that a small portion of this immense tract has been explored and that the opportunities are equally good for other fully as important finds.

The men behind this move are A. L. Kern of Milwaukee and A. D. Thomson, Albert Hubbell, C. A. Phelps and C. A. Wright of Duluth, Minn. It is their intention to continue the development of the Buckhorn Ore company's grounds in even a more aggressive manner than their predecessors; to inaugurate steady ore production, and, in fact, give to this property the attention and work to which it is entitled, so as to give it a commanding position among the great mines of the west.

Portland Cement Company's Big Plant



The Big Stack at Butte, Montana.

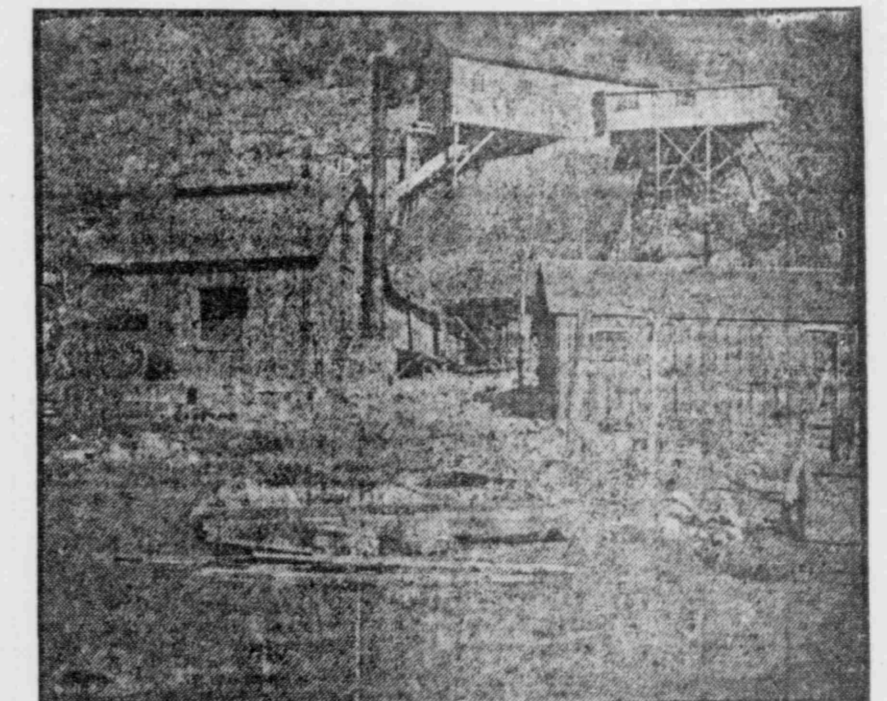
An important factor among the industries of Salt Lake is the manufacture of Portland cement. This valuable product is produced by the Portland Cement company of Utah (limited), with a mill located in the southwestern part of the city, and quarries on the Rio Grande Western railroad in Parley's canyon, some eight miles distant. The plant has been operated during the past year at full capacity, producing on an average about 400 barrels of cement a day. But so far has been the demand in advance of the supply that the present capacity of the mill will be doubled within the coming year. The trade mark of the product of this company is "Red Diamond," and for this brand its manufacturers claim that it is one of the most uniform high grade Portland cements made in the world. It is shipped from Salt Lake all over Utah and into Colorado, California, Idaho, Montana and Washington, and is used in all kinds of construction work by corporations, municipalities and the federal government throughout the entire western region, from Denver to the Pacific coast, and from Seattle to Los Angeles.

Within the past year the city engineer of Salt Lake tested and accepted 30,000 barrels of this cement without a single rejection. It was used in building a smelter stack for the Butte reduction works, owned by Senator W. A. Clark of Montana, 352 feet 7 inches high—the tallest structure of its kind in the world. This is a cement age, and monolithic work, on account of its strength and durability, is rapidly replacing other materials.

The manufacture of Portland cement is a short but technical and expensive process. It is first crushed then dried, and afterwards rolled to a fineness approaching fine sand. Next it is burned by passing through large revolving inclined cylinders, into the lower end of which cold dust is blown; the blast hastening the combustion until the coal is all burned, leaving the cement in clinkers, which are cooled and then reduced by rolls and balls to such a degree of fineness that practically all of the finished product will pass through a 100-mesh screen.

The doubling of the capacity of this mill will be accomplished by moving the crushers to the quarry, and the space made at the mill in this way will

Continental Alta's Splendid Prosperity



Mill of Continental Alta.

The Continental Mines & Smelter corporation, with the Continental Alta mines as a basis, is doing much to develop Alta camp and the Little Cottonwood country. Henry M. Crowther of Salt Lake is general manager; R. S. Smith is superintendent of the mine and mill. The operations embody the operation of a mine, which is the result of grouping a number of famous producing properties when the camp was in its palmy days, a mill of 100 tons capacity, an aerial tramway over 15,000 feet long, connecting the mine and mill, and a power system from 4,000 feet of water pipe, acting directly on a four-foot Pelton wheel and two Dersamer wheels. The mill consists of Huntington rolls, crushers, Hartz jigs, four vanners and two Overstrom jigs. The company now controls the Alta branch of the Rio Grande Western road, running from Bingham Junction via Wasatch, and this will be put in operation next year. In the enterprise from fifty to seventy-five men are employed, and after two years of work the main chamber is now being cut at a depth of 800 feet. Deeper development is now being prosecuted. The property is cut by twelve tunnels in all. The product is chiefly sand carbonates, carrying mostly lead carbonate, silver and some gold. Copper of high grade is also of frequent occurrence. Another product, the process for handling which is being rounded out, is molybdenum. This occurs in the form of silicate in the carbonates, and resembles yellow mica. The wolframite is of general occurrence in the mine and molybdenum, which is obtained by smelting, is worth \$2.75 a pound.

The ore bodies are of unusual size, often being forty feet wide, and the output is an excellent milling proposition. The tramway is also intended to do custom transportation. It can handle twenty tons an hour and can save \$1 a ton on down freight and \$3 a ton on up freight as compared with team transportation. A contract is now about to be closed with the Flagstaff mine for handling over the line 100,000 tons from its old dump.

The mine is a gigantic affair, and was held back by litigation until the present management bought up the litigants and effected a consolidation. The corporation recently reduced its capitalization from 5,000,000 to 1,500,000 shares. One million shares have been issued for the Alta enterprise and 4,000,000 shares were originally intended to acquire other mines, but 3,500,000 shares have been cancelled, leaving 500,000 shares in the treasury.

COQUETTE.

(Cleveland Leader.)

Her—You have deceived me cruelly! Her—How so? Her—You promised to love me forever, and now I find you carrying on with another man. Her—Cheer up, George, I'm going to deceive him, too.

New work on the 400 and the 200-foot levels have uncovered some rich stuff and fully as large ore bodies. At present from 600 to 800 tons are being shipped by the company and from 100 to 150 tons are shipped by leasers from Carisa ground.

SUNDAY SCHOOL UNION.

Work of National Organization in Utah During Past Year.

The American Sunday School union, with headquarters at 1122 Chestnut street, Philadelphia, Pa., and of which Rev. J. M. Crowell, D. D., is secretary, has been doing missionary work in Utah for over ten years. During that time more than seventy Sunday schools have been organized, and hundreds of children have been brought under religious instruction. The work done by the missionaries has been of the pioneer kind and unsectarian in its character. The object has been to gather the neglected children, where some one competent could be obtained to superintend, into schools where they might be taught the word of God. In many instances denominational work has grown out of the seed planted, as it is the policy of the American Sunday School union to withdraw from a field when an evangelical denomination enters. Five of the great denominations have been thus benefited. During the past year two missionaries, Mrs. E. B. Rand of Summit county and James H. Worrall of Salt Lake City, have given their entire time to the work in Utah; J. D. Johnson of Salt Lake City has given the major part of his time to Idaho. The two missionaries in Utah have organized eleven Sunday schools; two home departments also have been conducted; three chapels have been secured (though not paid for in full), one at Kanab, one at Highland Boy smelter and one at Milford. More than 300 children have been under religious instruction the whole or part of the year. The report of one missionary includes the distribution, in homes and Sunday schools, \$154.27 of books and periodicals, aggregating many thousands of pages of Christian literature; 181 Bibles and 183 Testaments have been placed in homes, a large percentage of them going into homes destitute of the